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09/905,698	07/10/2001	Richard R. Dickson	00-714	6169

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/905,698
Filing Date: July 10, 2001
Appellant(s): DICKSON ET AL.

Jeff A. Greene
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed March 6, 2006 appealing from the Office action mailed May 13, 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

10/692,871 is currently under appeal and a Notice of Non-Compliant Brief was mailed 2/02/06.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US PGPUB 2003/0136177	**HENDREN et al.**	**7-2003**
3,699,814	**KAUFMAN**	**10-1972**
4,067,300	**KONO**	**1-1978**

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 1 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over US PG Pub No. US 2003/0136177 (hereinafter Hendren et al.). As to claim 1, Hendren et al disclose an emission sampling apparatus which includes a dilution tunnel 20 with dilution air supply inlet (at mixing tee 27 with exhaust inlet 17) with a sampling system 70,72,74, the dilution tunnel 20 being connected to exhaust gas stream(in sample line 16) from exhaust 11 of engine 12 which can be an internal combustion engine (see par 10, lines 10-12), flow control valve 28, second mass flow controller 36, filter 34 with a dilution air control arrangement 42/50 having a *constant* mass stream exiting via **fixed flow** rate pump 29

connected with a *variable* flow stream derived *via* **variably controlled solenoid valve** 28 which provides a *variable* flow stream "prior to the inlet of the partial flow dilution tunnel", see figs 1-2 and par. 47 et seq. Further, it is noted that a mass flow controller, per se, is not designated by Hendren et al. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to have designated the computer controlled solenoid valve 28 which is connected to the laminar flow element 42 as a mass flow controller as it performs the function of controlling the flow rate of the flow, as in a "mass flow controller". As to claim 9, note LFE/air flow measurement instrument 40 (see par. 47, line 6 and fig. 1) at the air intake of engine 12 which comprises a laminar flow element.

2. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hendren et al (PG Pub# US2003/0136177) as applied to claims 1 and 9 above, and further in view of Kaufman- U.S. Patent # 3,699,814. As to claim 2, usage of a critical flow venturi is not illustrated as being included in the constant mass flow stream extending from the pump 29 to the valve 28. However, in a related prior art device, Kaufman discloses an exhaust gas sampler and employs a critical flow venturi 34 which is specifically designed to achieve a proper flow rate, see col. 5, lines 58 et seq. Therefore, the inclusion of such a critical flow venturi in addition to pump 29 and valve 28 would have been obvious to one of ordinary skill in the art at the time of the invention for production and maintenance of a constant volume flow control device, see Kaufman col.6, lines 36-47.

3. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hendren et al in view of Kono- U.S. Patent # 4,067,300. As to claim 10, Hendren et al do not elaborate on the type of laminar flow measurement used in the LFE 40 as including a pressure *differential* transducer. Further, it is noted that Hendren et al do indicate the usage of pressure transducers with the laminar flow element, see par. 57. However, in a related prior art device, Kono discloses using the pressure *differential* at the intake port of the engine which is generated in a laminar flow meter, see col. 4, lines 46 et seq. Therefore, usage of a pressure *differential* measurement with laminar flow element pressure transducer is considered to have been a matter design choice obvious to one of ordinary skill in the art at the time of the invention in view of the teaching by Kono for measuring pressure *differential* as a known expediency for measuring the air intake flow rate. As to claim 11, as laminar flow elements are used in combination with pressure transducers by Hendren et al, they are recited as having the capability of compensating air pressures and "computer control" is provided to the LFE and pressure transducers, see pars. 57-58. Further, official notice is taken that laminar flow elements are also known as laminar flow proportional amplifiers and therefore, it is considered to have been a matter of design choice obvious to one of ordinary skill in the art at the time of the invention to have incorporated a *selectable gain change circuit* in the recited computer control of the laminar flow element/amplifier circuit to adjust the gain of

the "amplifier" i.e. control the laminar flow element as recited in par. 58. As to claim 12, as a computer is known to have the capability of handling one of a single or multiple channel input, it would appear that it would have been obvious to one of ordinary skill in the art at the time of the invention to have designated that the selectable gain circuit (computer control) would appear to have the capability of being "switchable" to handle one of a single or multiple channel input. As to claim 13, again a computer would have the capability of being selectable between a plurality of course settings and therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have indicated the selectable gain circuit (computer control) would also have the capability of being selectable between a plurality of course settings.

(10) Response to Argument

In response to Appellant's first argument that claim 1 recites the feature that the connection of a variable mass flow stream and a constant mass flow stream is not taught or suggested in the Hendren reference, it is noted that a "connection" between a constant mass flow stream (from fixed flow rate pump 29) and variable mass flow stream (exiting from proportional solenoid valve 28) is clearly illustrated in Fig. 1 and described in par. 49.

In response to Appellant's second argument that the proportional valve 28 creates a backpressure in the line from fixed flow rate pump causing the flow rate out of the pump to be the same as the flow rate coming from the valve, it is noted

that this is clearly contradictory to the teaching by Hendren et al. of the operation of these elements as is described in par. 49 and is merely speculation without any evidentiary support.

In response to Appellant's third argument that Hendren "cannot and does not divide the dilution air into a constant mass flow stream that is connected (summed, or otherwise combined) with a variable mass flow stream", it is noted that there is NO CLAIM LANGUAGE reciting *dividing* the dilution air or *summing* or *otherwise combining* the two flows. Therefore, such an argument is moot.

In response to Appellant's fourth and final argument that Hendren teaches that the dilution airflow is controlled in an inverse proportion to the ratio of the intake air flow and the engine intake air flow at idle and therefore cannot provide a reasonable expectation of success, such a distinction as to *operation* and *speculation* as to the amount of success of the Hendren et al. is irrelevant to the rejection based on the *claim language* which has been clearly met by the Hendren et al reference, as illustrated above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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